

CLAIMS:

1. A magnetic resonance imaging apparatus (1) comprising a gradient coil assembly (3, 4, 5) for generating gradient magnetic fields in an imaging volume, the gradient coil assembly (3, 4, 5) comprising at least three gradient coils (3, 4, 5) for generating three different gradient magnetic fields,

5 characterized in that a conductive element (71, 72, 73) is provided in close proximity to at least one of the gradient coils (3, 4, 5) in order to compensate self-induced eddy currents in the gradient coil assembly (3, 4, 5).

2. An apparatus as claimed in to claim 1,
10 characterized in that the conductive element (71, 72, 73) is provided inside the at least one gradient coil (3, 4, 5).

3. An apparatus as claimed in to claim 1,
15 characterized in that the conductive element (71, 72, 73) is provided between an inner gradient coil element and an outer gradient coil element of the at least one gradient coil (3, 4, 5).

4. An apparatus as claimed in to claim 1,
20 characterized in that the conductive element (71, 72, 73) comprises an active or passive coil loop.

5. An apparatus as claimed in to claim 4,
characterized in that the loop is short-circuited in itself.

25 6. An apparatus as claimed in to claim 4,
characterized in that the loop is connected to a separate loop amplifier.

7. An apparatus as claimed in to claim 4,

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10. An apparatus as claimed in to claim 1,
characterized in that conductive elements (71, 72, 73) are provided in the
gradient coil assembly (3, 4, 5) such that essentially undesirable high-order behavior of the
gradient coils (3, 4, 5) is suppressed and that the nature of the short term self-eddy field
becomes similar to that of the gradient coils (3, 4, 5).